Transfer Controller with Hub and Ports Architecture TCHP and related functions

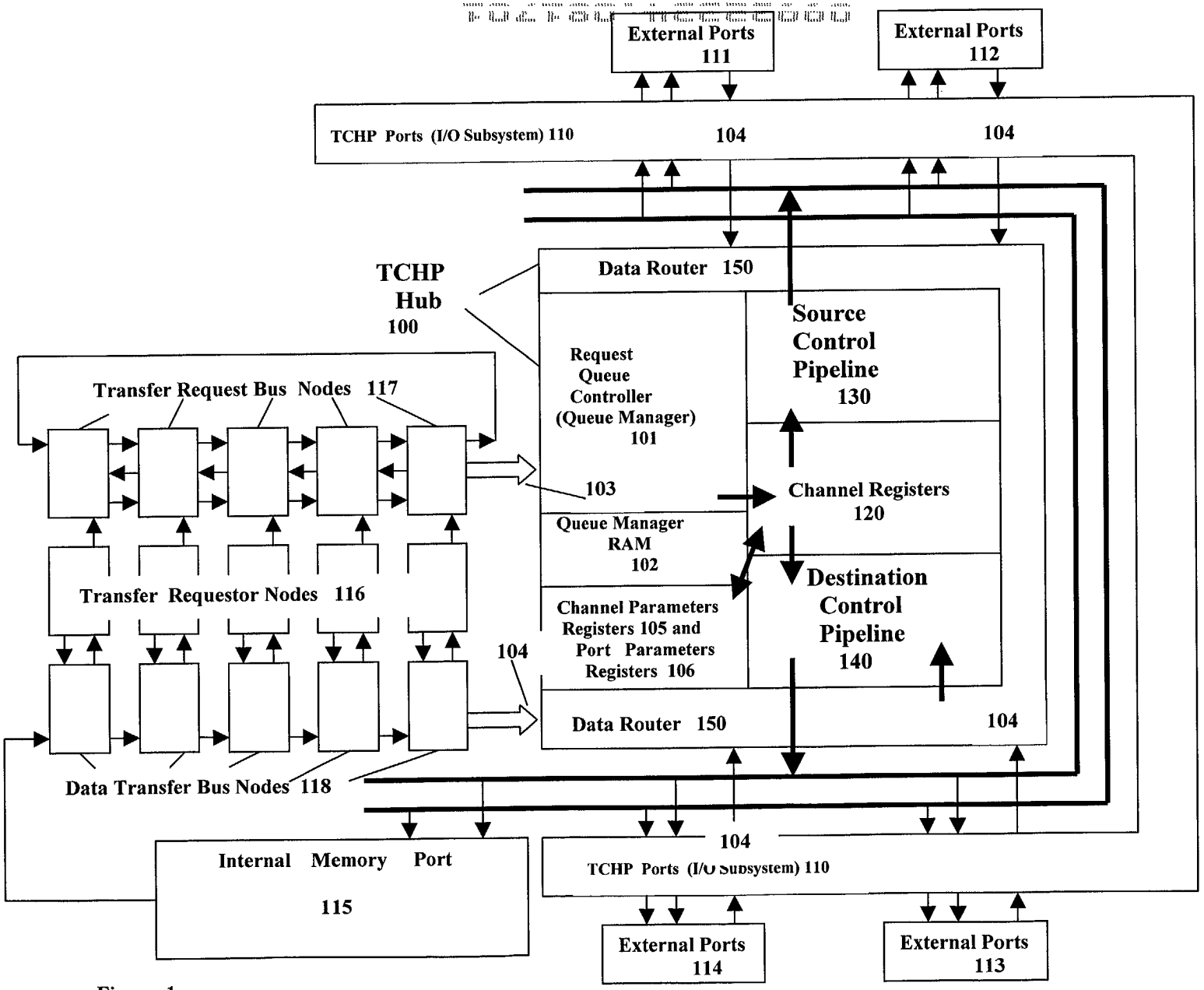
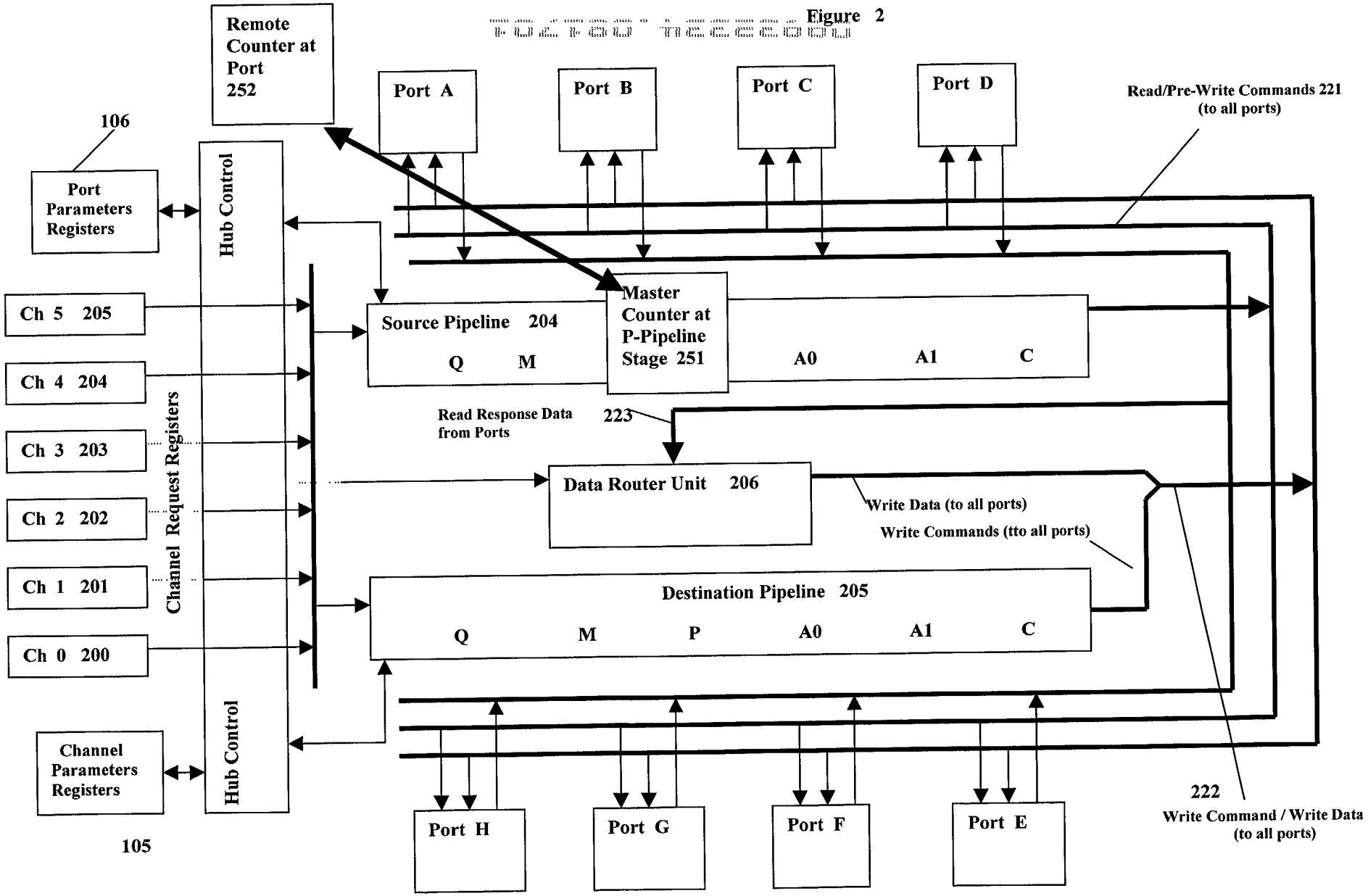


Figure 1

Figure 2


Remote Counter at Port 252
Port A
Port B
Port C
Port D
Read/Pre-Write Commands 221 (to all ports)
106
Port Parameters Registers
Hub Control
Ch 5 205
Ch 4 204
Ch 3 203
Ch 2 202
Ch 1 201
Ch 0 200
Channel Request Registers
Source Pipeline 204
Q M
Master Counter at P-Pipeline Stage 251
A0 A1 C
Read Response Data from Ports
223
Data Router Unit 206
Write Data (to all ports)
Write Commands (tto all ports)
Destination Pipeline 205
Q M P A0 A1 C
Channel Parameters Registers
Hub Control
105
Port H
Port G
Port F
Port E
222
Write Command / Write Data (to all ports)

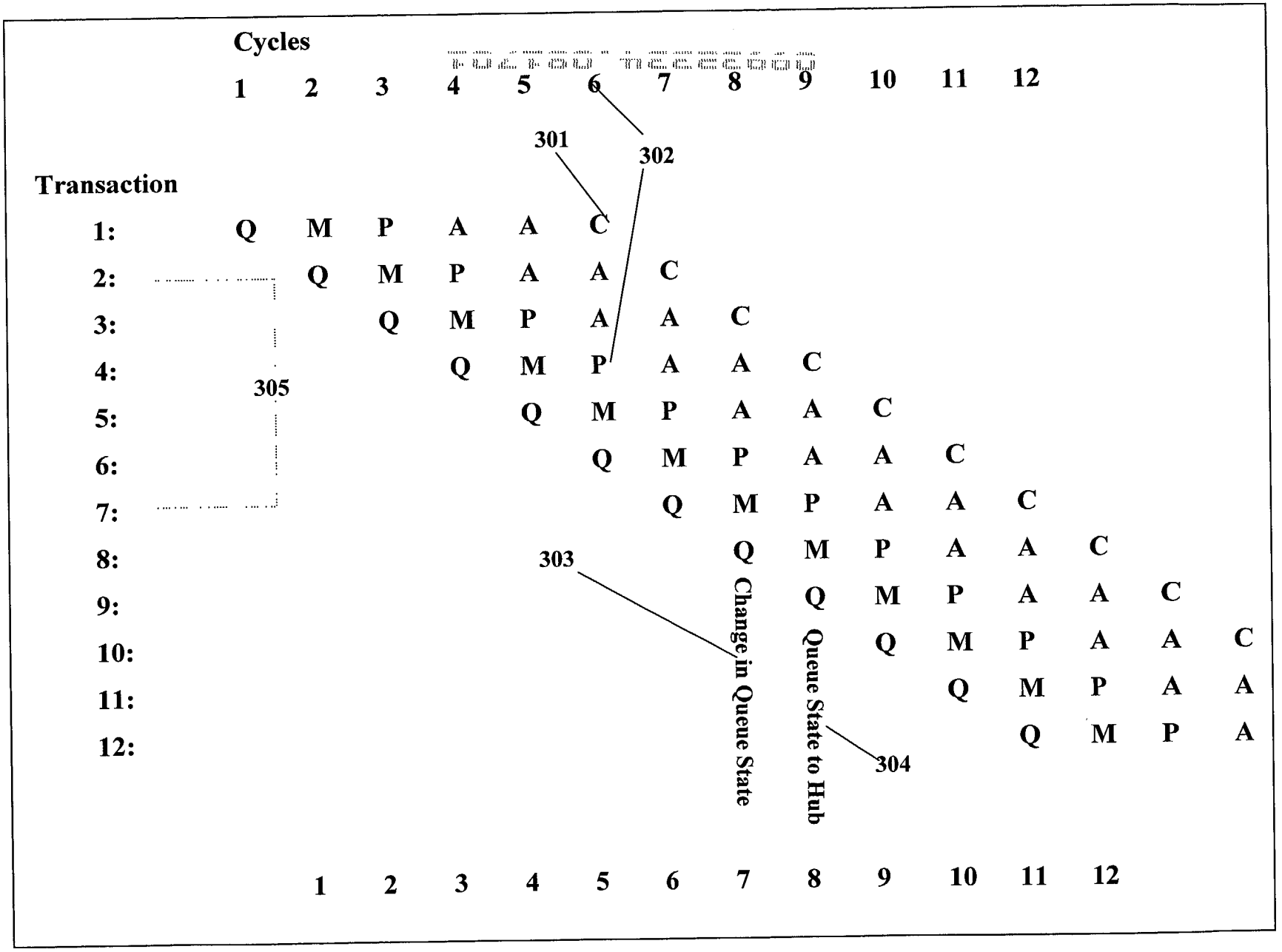
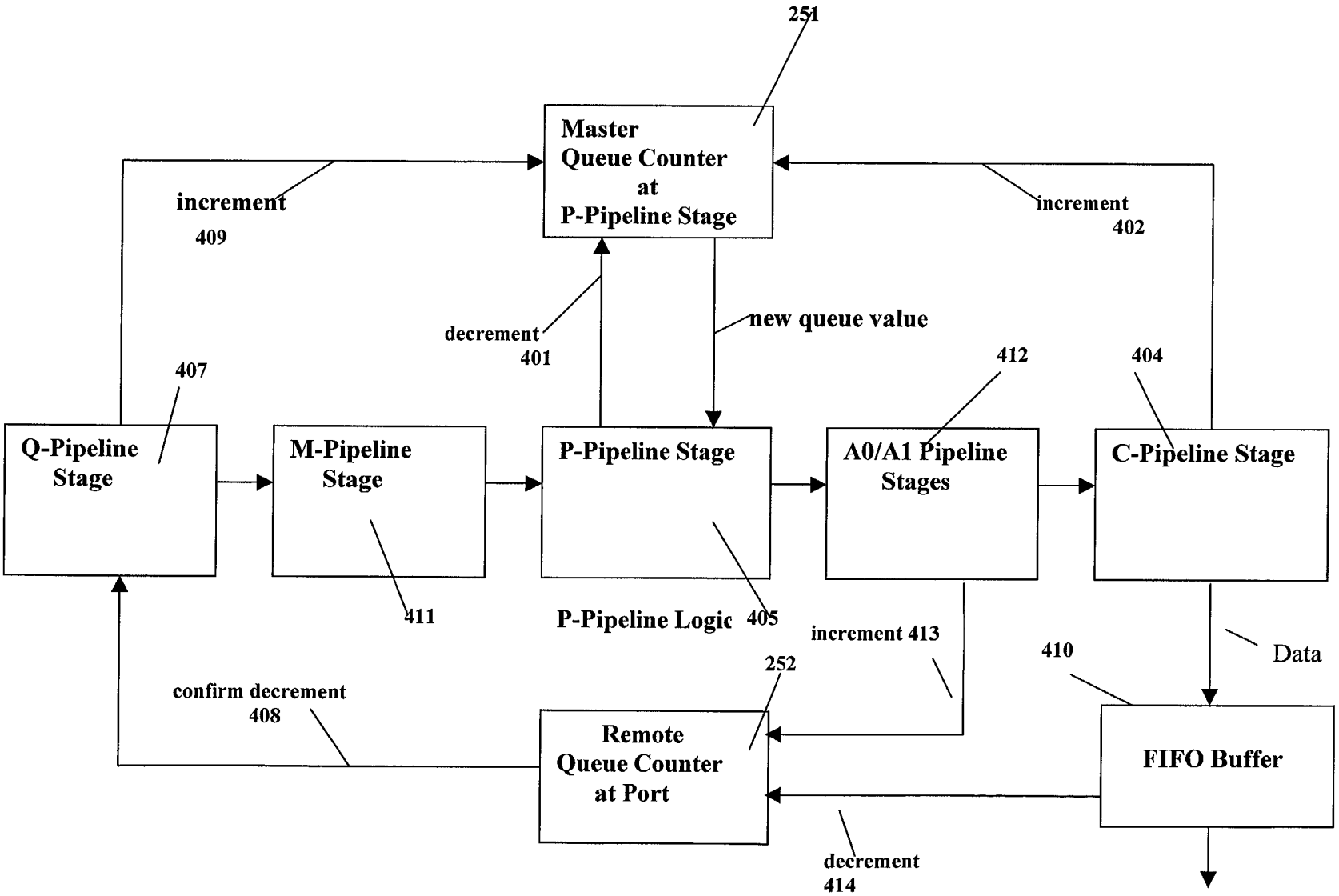

Cycles
1 2 3 4 5 6 7 8 9 10 11 12
301
302
Transaction
1: Q M P A A C
2: Q M P A A C
3: Q M P A A C
4: Q M P A A C
5: Q M P A A C
6: Q M P A A C
7: Q M P A A C
8: Q M P A A C
9: Q M P A A C
10: Q M P A A C
11: Q M P A A
12: Q M P A
305
303
304
Change in Queue State
Queue State to Hub
1 2 3 4 5 6 7 8 9 10 11 12

Figure 3

Figure 4


251
Master
Queue Counter
at
P-Pipeline Stage
increment
409
increment
402
decrement
401
new queue value
407
412
404
Q-Pipeline
Stage
M-Pipeline
Stage
P-Pipeline Stage
A0/A1 Pipeline
Stages
C-Pipeline Stage
411
P-Pipeline Logic
405
increment 413
410
Data
252
confirm decrement
408
Remote
Queue Counter
at Port
FIFO Buffer
decrement
414